

Climate Change: Adaptation Challenges and Prospects for California

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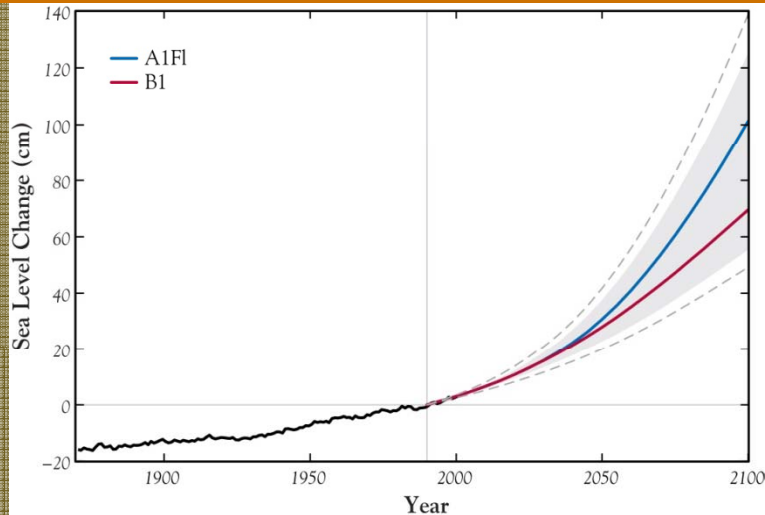
PPIC



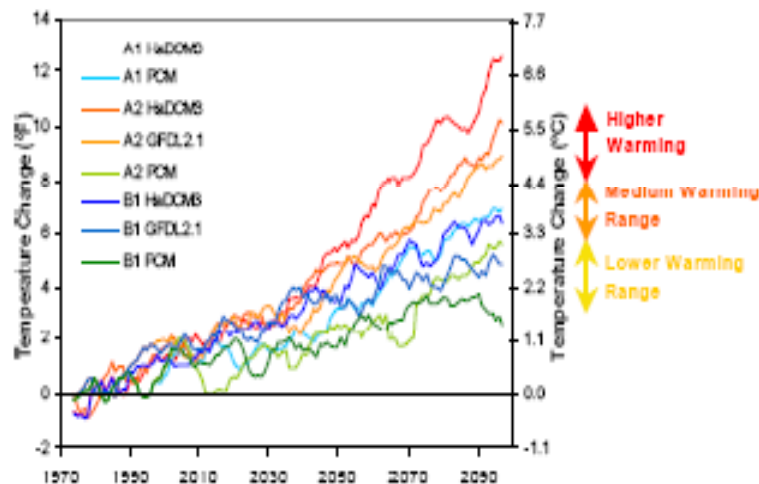
Outline

- Introduction
- Approaches to adaptation
- Barriers to adaptation
- Prospects for adaptation

Preparing for a Changing Climate



Source: modified from Rahmstorf, 2007



Source: Cayan et al, 2006

- Water resources (Ellen Hanak and Jay Lund)
- Electricity (Edward Vine)
- Coastal management (Ellen Hanak and Georgina Moreno)
- Air quality planning (Louise Bedsworth)
- Public health (Louise Bedsworth)
- Ecosystem conservation (Elisa Barbour and Lara Kueppers)

Approaches to adaptation

	Physical tools	Behavioral tools
Water management	New surface storage	Water marketing
Coastal management	Coastal armoring	Setback requirements
Electricity	Distributed generation	Real-time pricing

Adaptation should be undertaken when costs will be lowest

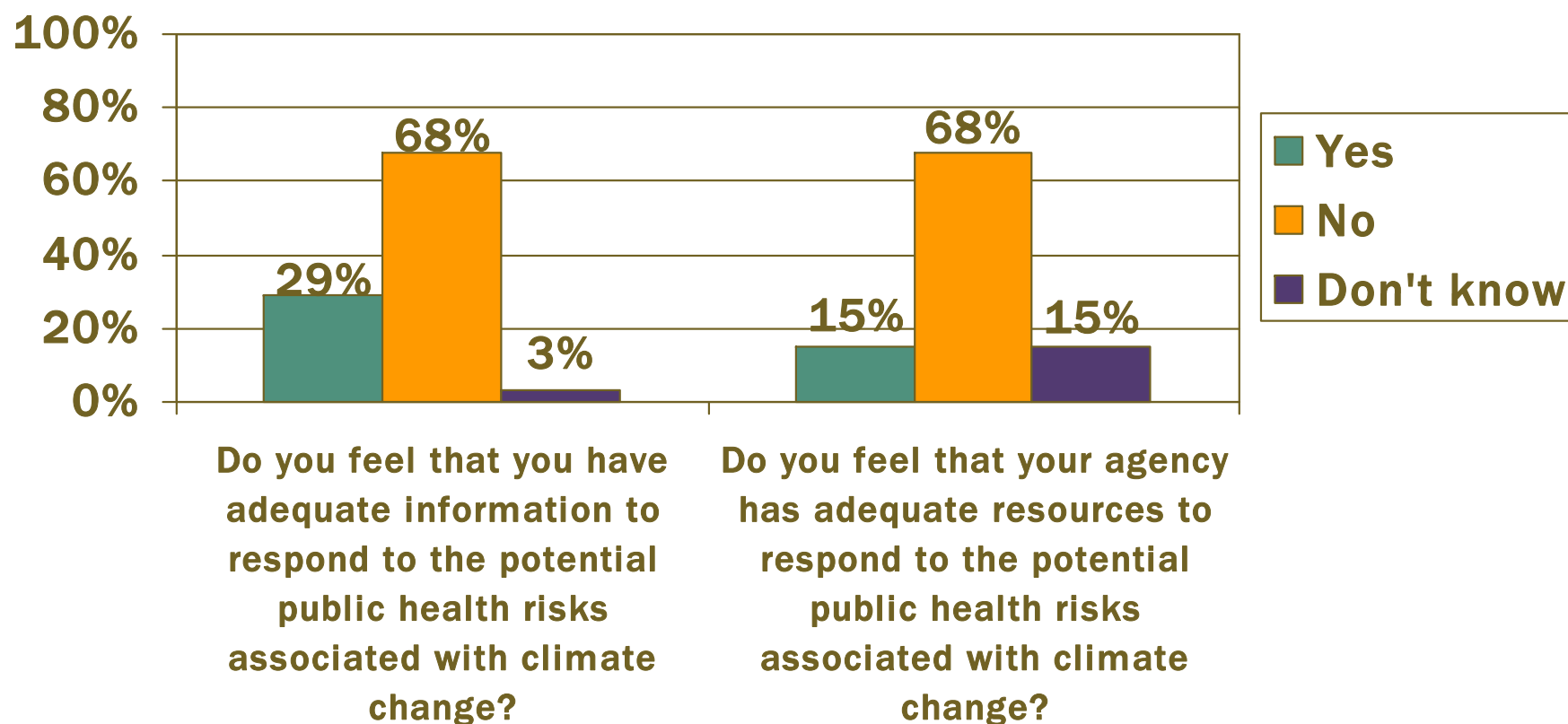
- Timing will vary by sector and approach
- Immediate action
 - Inexpensive, quick fixes
 - Long-term investments needed for adaptation (e.g., infrastructure investments)
 - Failure to adapt will have high costs (e.g., species extinction)
- Wait and see
 - Cost of inaction low
 - New information and learning will aid adaptation

Barriers can hinder adaptation

- Information – scientific and economic
 - What to plan for
 - Uncertainty about costs and benefits
- Funding and resources
 - Where to procure funding
 - Constraints on use of existing funds
- Authority
 - Federal policy constraints (e.g., floodplain development or Endangered Species Act)
- Lack of political will or incentives

Lack of information and resources can hinder adaptation

Local Health Officers and Climate Change



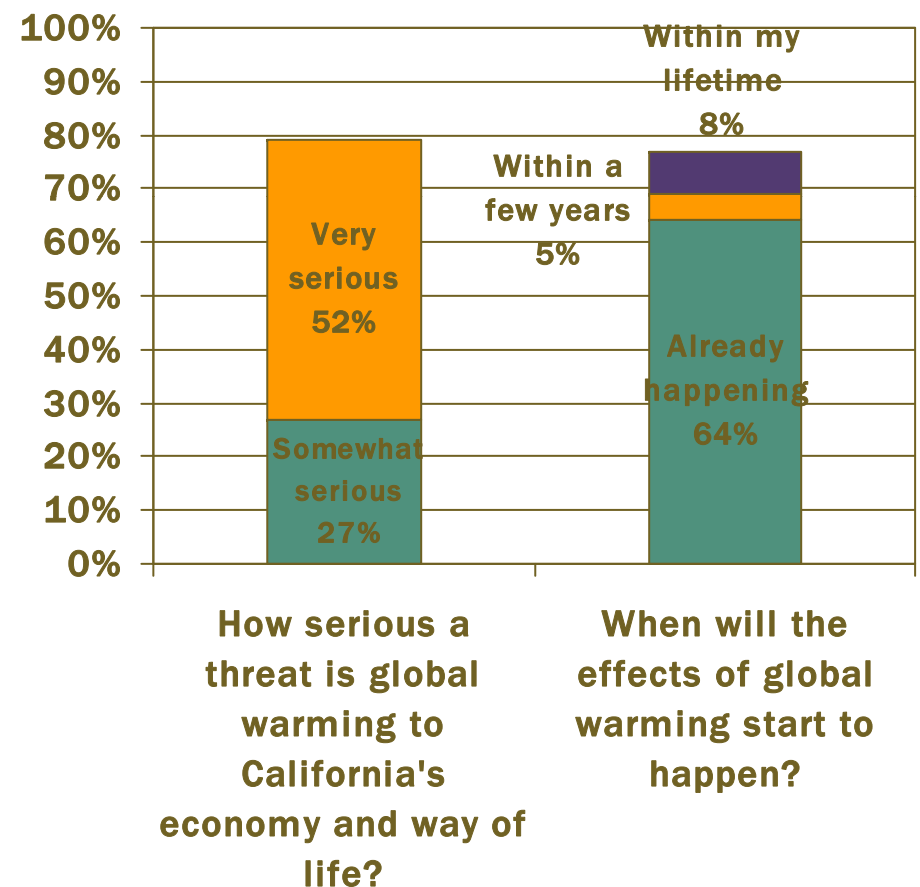
Source: Bedsworth, February 2008

Regulatory requirements can constrain adaptation

- Processes based on historical information
 - Habitat conservation
 - Air quality planning
 - Flood risk analysis
- Raising revenue to fund adaptation and increase preparedness
 - Local and regional revenue generation (e.g., flood and coastal management)

Some prospects for adaptation planning are good

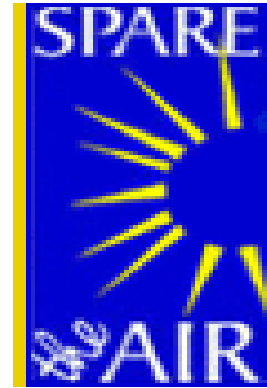
- Appears to be public understanding of the need for adaptation
- Some existing programs provide a good starting point
- Strong state dialogue on climate change mitigation



Source: PPIC Statewide Survey, July 2008

Some programs provide a good foundation for adaptation

- Emergency plans
 - Heat emergency plans
- Public education programs
 - Spare the Air, Flex Your Power
 - Water use efficiency
- Technical and management tools
 - Disease tracking
 - Water resources (e.g., drought planning)



Adaptation needs and opportunities

- Examine climate science needs in light of adaptation challenges
- Identify legal and regulatory constraints to adaptation
- Build on current climate change policy process to foster dialogue on adaptation at state and local level